

IN THE CLAIMS

Please cancel claims 1-12 and add new claims 13-27 as follows:

1-12. (CANCELED)

13. (NEW) A system for integrating cellular telephone and internet protocol networks, comprising:

at least one router for routing voice calls and data on both an internet protocol network and a cellular telephone network, wherein the router converts the voice calls and data on the cellular telephone network into an internet protocol for transmission on the internet protocol network, and the router converts the voice calls and data on the internet protocol network into a cellular telephone protocol for transmission on the cellular telephone network;

at least one base transceiver station, directly coupled to the router using the cellular telephone network, for communicating the voice calls and data with a mobile telephone using radio frequency signals within a transmission area associated with the base transceiver station and for transferring the voice calls and data between the mobile telephone and the router; and

at least one home agent and foreign agent, both directly coupled to the router via the internet protocol network, for forwarding the voice calls and data to the mobile telephone based on an internet protocol address for the mobile telephone, wherein the home agent registers a mobile telephone with the foreign agent, the home agent tunnels the voice calls and data for the mobile telephone to the foreign agent through the router, and the foreign agent delivers the tunneled voice calls and data to the mobile telephone via the router using the internet protocol address for the mobile telephone.

14. (NEW) The system of claim 13, wherein the router performs mobility management, call processing and radio resource management for the cellular telephone network and the internet protocol network.

15. (NEW) The system of claim 13, wherein both the home agent and foreign agent direct the voice calls and data to the mobile telephone using the internet protocol address for the mobile telephone.

16. (NEW) The system of claim 13, wherein the cellular telephone network is not an internet protocol network.

17. (NEW) The system of claim 13, wherein the home agent registers a mobile telephone with the foreign agent when the mobile telephone is not in its home network.

18. (NEW) The system of claim 13, wherein the home agent tunnels the voice calls and data for the mobile telephone to the foreign agent through the router when the mobile telephone is not in its home network.

19. (NEW) The system of claim 13, wherein the foreign agent delivers the tunneled voice calls and data to the mobile telephone via the router using the internet protocol address for the mobile telephone when the mobile telephone is not in its home network.

20. (NEW) The system of claim 13, wherein the base transceiver station is a first base transceiver station, and a handoff between the first base transceiver station and a second base transceiver station is performed through the internet protocol network.

21. (NEW) The system of claim 20, wherein:

- the mobile telephone is handed off to the second base transceiver station, which is controlled by the router that controls the first base transceiver station, using a handoff message sent to both the first base transceiver stations and the second base transceiver station;
- the mobile telephone is served by the first base transceiver station until the mobile telephone can be anchored to the second base transceiver station, at which time a location update for the mobile telephone is sent to the foreign agent; and
- the voice messages and data are delivered to the mobile telephone from the foreign agent, through the first base transceiver station, through the second base transceiver station, and then to mobile telephone, until the foreign agent is updated by the location update for the mobile telephone, whence the mobile telephone receives the voice messages and data directly from the foreign agent, through the second base transceiver station, and then to the mobile telephone,

without going through the first base transceiver station, after the foreign agent is updated by the location update for the mobile telephone and the handoff is completed.

22. (NEW) The system of claim 20, wherein the router is a first router, the foreign agent is a first foreign agent, and the handoff is performed from the first router and the first foreign agent to a second router and a second foreign agent using the internet protocol network.

23. (NEW) The system of claim 22, wherein:

the mobile telephone is handed off to the second base transceiver station, which is controlled by the second router that does not control the first base transceiver station, using a handoff message sent to both the first base transceiver stations and the second base transceiver station;

the mobile telephone is served by the first base transceiver station until the mobile telephone can be anchored to the second base transceiver station, at which time a location update for the mobile telephone is sent to the first foreign agent, the second foreign agent, and the home agent; and

the voice messages and data are delivered to the mobile telephone from the first foreign agent, through the second foreign agent, through the second base transceiver station, and then to mobile telephone, until the first foreign agent, the second foreign agent, and the home agent are updated by the location update for the mobile telephone, whence the mobile telephone receives the voice messages and data directly from the home agent, through the second foreign agent, through the second base transceiver station, and then to the mobile telephone, without going through the first foreign agent and the first base transceiver station, after the first foreign agent, the second foreign agent, and the home agent are updated by the location update for the mobile telephone and the handoff is completed.

24. (NEW) The system of claim 20, wherein the handoff is a soft hand off performed between the first base transceiver station and the second base transceiver station using asynchronous transfer mode communications between the router and the first base transceiver station, and the router and the second base transceiver station.

25. (NEW) The system of claim 13, wherein the router is a hand-off server, and the mobile telephone, the base transceiver station and the handoff server communicate using internet protocol in the asynchronous transfer mode connection.

26. (NEW) The system of claim 25, wherein, when a handoff is not being performed, the mobile telephone is connected to the base transceiver station through a virtual circuit, and the base transceiver station is connected to the handoff server using internet protocol in the asynchronous transfer mode connection.

27. (NEW) The system of claim 25, wherein, when a handoff is performed, the mobile telephone is connected to the handoff server directly through the asynchronous transfer mode connection.